May 9, 2003

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
AND
U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION IX

TENTATIVE

ADDENDUM NO. 1 TO ORDER NO. R9-2002-0025, NPDES PERMIT NO. CA0107409 MODIFYING THE MONITORING AND REPORTING PROGRAM FOR THE CITY OF SAN DIEGO E. W. BLOM POINT LOMA METROPOLITAN WASTEWATER TREATMENT PLANT

DISCHARGE TO THE PACIFIC OCEAN
THROUGH THE POINT LOMA OCEAN OUTFALL
SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (Regional Board) and the United States Environmental Protection Agency, Region IX (USEPA) find that:

1. On April 10, 2002, this Regional Board adopted Order No. R9-2002-0025, *Waste Discharge Requirements and National Pollutant Discharge Elimination System Permit No. CA0107409 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall, San Diego County*. The USEPA issued its final approval of the joint permit, as amended by State Water Resources Control Board (State Board) Order No. WQO 2002-0013, on September 12, 2002. During the public hearing on April 10, 2002, this Regional Board indicated that the monitoring and reporting program associated with the order would be modified at a later date to incorporate recommendations of the Southern California Coastal Water Research Project's (SCCWRP) *Model Monitoring Program for Large Ocean Discharges in Southern California*. The modifications to the monitoring and reporting program in this addendum are based on those recommendations.

2. According to Section 13383(e) of the California Water Code, the Regional Board may, upon application by any affected person, or on its own motion, review and revise waste discharge requirements.

3. The issuance of waste discharge requirements for this discharge is exempt from the requirement of preparation of environmental documents under the California Environmental Quality Act [Public Resources Code, Division 13, Chapter 3, Section 21000 *et seq*.] in accordance with Section 13389 of the California Water Code.

4. The Regional Board has notified all interested parties of its intent to modify Order No. R9-2002-0025, NPDES Permit No. CA0107409.

5. The Regional Board in a public hearing on June 11, 2003 heard and considered all comments pertaining to the modification of Order No. R9-2002-0025, NPDES Permit No. CA0107409.

IT IS HEREBY ORDERED that, effective August 1, 2003, the following supersedes and entirely replaces the monitoring and reporting requirements previously established by Order No. R9-2002-0025, NPDES Permit No. CA0107409.

A. GENERAL MONITORING AND REPORTING PROVISIONS

1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored waste stream. All samples shall be taken at the monitoring points specified in this MRP and, unless otherwise specified, before the waste stream joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall be subject to the approval of the Regional Board Executive Officer (hereinafter Executive Officer) and the U. S. Environmental Protection Agency, Region IX (hereinafter USEPA), Water Division Director (hereinafter Director) and shall not be changed without notification to and the approval of the Executive Officer and the Director. Samples shall be collected at times representative of "worst case" conditions with respect to compliance with the requirements of Order No. R9-2002-0025.

2. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than $\pm$5 percent from true discharge rates throughout the range of expected discharge volumes.

3. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved under Title 40 of the Code of Federal Regulations Part 136 (40CFR 136), Guidelines Establishing Test Procedures for the

Analysis of Pollutants, USEPA SW-846, as amended, unless otherwise specified for sludge in 40CFR 503, or unless other test procedures have been specified in Order No. R9-2002-0025 and/or in this monitoring and reporting program.

4. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services in accordance with the provision of Section 13176 CWC or a laboratory approved by the Executive Officer.

5. Monitoring results must be reported on discharge monitoring report (DMR) forms approved by the Executive Officer.

6. If the discharger monitors any pollutant more frequently than required by this MRP, using test procedures approved under 40 CFR 136, or as specified in this MRP, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. The increased frequency of monitoring shall also be reported.

7. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this MRP, Order No. R9-2002-0025 and any enforcement order issued by the Regional Board, and records of all data used to complete the application for Order No. R9-2002-0025. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Executive Officer or Director. It is recommended that the discharger maintain the results of all analyses indefinitely.

8. Records of monitoring information shall include:

   a. The date, exact location, and time of sampling or measurements;

   b. The individual(s) who performed the sampling or measurements;

   c. The date(s) analyses were performed;

   d. The laboratory and individual(s) who performed the analyses;

   e. The analytical techniques or methods used; and

   f. The results of all such analyses.

9. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in Order No. R9-2002-0025 or in this MRP. The discharger shall report the analysis results, calculation results, data, and equations used in calculations.

10. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Officer a written statement signed by a registered professional engineer certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required by General Monitoring and Reporting Provision A.2.

11. The discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. An annual report shall be submitted by April 1 of each year which summarizes the QA activities for the previous year. Duplicate chemical analyses must be conducted on a minimum of ten percent of the samples or at least one sample per month, whichever is greater. The discharger must have a success rate equal to or greater than 80 percent. A similar frequency shall be maintained for analyzing spiked samples. When requested by USEPA, the discharger will participate in the National Pollutant Discharge Elimination System (NPDES) discharger monitoring report quality assurance (QA) performance study.

12. The discharger shall report all instances of noncompliance not reported under 40 CFR 122.44 at the time monitoring reports are submitted. The reports shall contain the information listed in 40 CFR 122.44.

13. The monitoring reports shall be signed by an authorized person as required by 40 CFR 122.44.

14. A composite sample is generally defined as a combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. The 100-milliliter minimum volume of an aliquot does not apply to automatic self-purging samplers.

15. A grab sample is an individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

16. For all bacterial analyses, sample dilutions shall be performed so the range of values extends from 2 to 16,000. The detection method used for each analysis shall be reported with the results of the analysis.

17. Detection methods used for coliforms (total and fecal) shall be those presented in the most recent edition of Standard Methods for the Examination of Water and Wastewater or any improved method determined by the Executive Officer (and approved by USEPA) to be appropriate. Detection methods used for enterococcus shall be those presented in Test Methods for Escherichia coli and Enterococci in Water by Membrane Filter Procedure (EPA 600/4-85/076) or any improved method determined by the Executive Officer (and approved by USEPA) to be appropriate.

18. MRP No. R9-2002-0025 may be modified by the Executive Officer and USEPA to enable the discharger to participate in comprehensive regional monitoring activities conducted in the Southern California Bight during the term of this permit. The intent of regional monitoring activities is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the region. During these coordinated sampling efforts, the discharger's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources.

19. By July 1 of each year, the discharger shall submit an annual report of the treatment plant and outfall operations to the Executive Officer and USEPA which contains tabular and graphical summaries of the monitoring data obtained during the previous year. The discharger shall discuss the compliance record and corrective actions taken, or which may be needed, to bring the discharge into full compliance with the requirements of Order No. R9-2002-0025 and this MRP. The report shall address operator certification and provide a list of current operating personnel and their grade of certification. The report shall include the date of the facilities' Operations and Maintenance Manual, the date the manual was last reviewed, and a statement as to whether the manual is complete and valid for the current facilities. The report shall restate, for the record, the laboratories used by the discharger to monitor compliance with Order No. R9-2002-0025 and this MRP, and provide a summary of performance relative to the requirements in this MRP.

20. The sampling frequency of "daily" means that samples shall be collected seven days per week. "Weekly" samples shall be collected such that each day of the week is represented during a seven week period.

21. Monitoring results shall be reported at intervals and in a manner specified in this MRP and Order No. R9-2002-0025. Monitoring reports shall be submitted to the Executive Officer and to USEPA according to the following schedule:

REPORTS	**Report Period**	**Report Due**
MONTHLY REPORTS Influent and Effluent Solids Removal/Disposal Receiving Water Quality Report Tijuana Cross-Border Emergency Connection (when flowing)	Monthly	By the 1st day of 2nd following month (e.g., March 1 for January)
QUARTERLY REPORTS Sludge Analysis	 January-March April-June July-September October-December	 June 1 September 1 December 1 March 1
SEMI-ANNUAL REPORTS Pretreatment Report	 January-June	 September 1
ANNUAL REPORTS Pretreatment Report (Provision A.19) Sludge analysis QA Report Treatment plant and outfall operations Outfall inspection Receiving waters monitoring report Kelp report	January-December	 April 1 April 1 April 1 July 1 July 1 July 1 October 1

22. All influent, effluent, and receiving water data shall be submitted annually to USEPA for inclusion in the STORET database. The data shall be submitted in an electronic format specified by USEPA.

B. INFLUENT AND EFFLUENT MONITORING

Influent monitoring is required to determine the effectiveness of pretreatment and nonindustrial

source control programs, to assess the performance of treatment facilities, and to evaluate compliance with effluent limitations. As such, influent monitoring results must accurately characterize raw wastewater from the entire service area of the treatment facilities, unaffected by in-plant or return or recycle flows or the addition of treatment chemicals.

Effluent monitoring is required to determine compliance with the permit conditions and to identify operational problems and improve plant performance. Effluent monitoring also provides information on wastewater characteristics and flows for use in interpreting water quality and biological data. The effluent sampling station shall be located where representative samples of the effluent can be obtained. The sampling station shall be located downstream from any in-plant return flows and from the last connection through which wastes can be admitted to the outfall.

Influent and effluent monitoring shall be conducted as shown in Table 1. In addition monitoring of the waste flow in the standby emergency connection from the City of Tijuana, Mexico, shall be conducted as shown in Table 1, whenever there is flow from Mexico and/or the SBIWTP through the connection.
The discharger shall report the Mass Emission Rate (MER) in lb/day or mt/yr for all constituents that have MER effluent limitations or MER benchmarks established by Discharge Specifications section B.1 and/or B.11 of Order No. R9-2002-0025. The discharger shall also report the concentration and flowrate used to calculate the MER for each constituent.

The system-wide percent removals of TSS and BOD_5 shall be calculated using the following formula (mass emissions in metric tons):

$$\% \text{ Removal (TSS or } BOD_5) = \frac{(\text{System Influents} - \text{Return Streams}) - \text{Outfall Discharge}}{\text{System Influents} - \text{Return Streams}} \times 100$$

Where,

System Influents	=	PLMWTP Influent, NCWRP [make sure this term has previously been defined] Influent Pump Station, and NCWRP Influent from Penasquitos Pump Station.
Return Streams	=	NCWRP Filter Backwash, NCWRP Plant Drain, NCWRP Secondary and Un-disinfected Filtered Effluent Bypass, NCWRP Final Effluent, and MBC Centrate

The TSS and BOD_5 concentration, together with flow rate, of each stream shall be measured daily (Table 2) and a system-wide removal rate calculated according to the above formula. In the

event that a flow rate measurement, TSS concentration, or BOD_5 concentration is not obtained from a stream, the median value for the previous calendar year for that stream shall be used as a surrogate number to allow completion of the calculation. The discharger shall be required to flag values where surrogate numbers are used in their self-monitoring reports submitted to the Executive Officer. The failure to obtain a value may still be considered a violation of the permit that could result in enforcement action depending on the frequency of failures and efforts by the discharger to prevent such failures.

C. SLUDGE MONITORING REQUIREMENTS

General sludge monitoring and reporting requirements are contained in Sludge Requirements, Section I, of Order No. R9-2002-0025.

D. RECEIVING ENVIRONMENT MONITORING

Receiving environment monitoring shall be conducted as specified below. Station location, sample type, sample preservation, and analyses, when not specified, shall be by methods approved by the Executive Officer and Director.

The monitoring program around the current discharge site off Point Loma has been in existence since 1991 and has focused on physical, chemical, and biological patterns in the region. This program is being revised to reallocate existing effort to address crucial processes not addressed by earlier monitoring programs, and provide a regional framework for interpreting discharge-related effects. The monitoring program has been modified to reflect the principles expressed in the "Model Monitoring Program for Large Ocean Dischargers in Southern California" (SCCWRP, 2002). The following three components constitute the new receiving water monitoring program: 1) Core Monitoring, 2) Strategic Process Studies, and 3) Regional Monitoring. These three components are needed to evaluate compliance with the permit, federal 301(h) decision criteria, and State water quality standards, and to assess the effects of the discharge on the marine environment.

1. Core Monitoring.

There are five components to the core monitoring program: a) general water quality monitoring, b) bacteriological monitoring of the offshore waters, kelp beds, and shoreline, c) monitoring of sediments for grain size, chemistry and benthic community structure, d) monitoring of demersal fish and megabenthic invertebrate communities, and contaminant body burdens in fishes and e) monitoring of kelp bed canopy cover.

a. General water quality. The offshore water quality sampling program is designed to help evaluate the fate of the wastewater plume under various conditions and to determine if California Ocean Plan standards are being met. A 36 station grid shall be sampled on a quarterly basis for salinity, temperature, density, pH, transmissivity, dissolved oxygen (DO), chlorophyll *a* and enterococcus (Table 3, Figure 1). The grid shall be oriented along depth contours specified in Table 4. Salinity, temperature, density, pH, dissolved oxygen, light transmittance and chlorophyll *a* shall be measured throughout the entire water column. These may be measured using a CTD equipped with probes for pH and DO, a transmissometer (for light transmittance), and a fluorometer (for chlorophyll *a* measurements).

General water quality sampling at an additional eight stations located in the kelp beds is conducted at least five times per month (Tables 3 and 4, Figure 1). Sampling at these stations also includes the collection of water samples for bacteriological analysis (see "Microbiological sampling" below).

Visual observations of the surface water conditions at the designated receiving water stations shall be conducted in such a manner to enable the observer to describe and to report the presence, if any, of floatable materials of sewage origin. Observations of wind (direction and speed), weather (e.g., cloudy, sunny, or rainy), and tidal conditions (e.g., high or low tide) shall be recorded. Observations of water color, discoloration, oil and grease, turbidity, odor, materials of sewage origin in the water or on the beach shall be recorded. These observations shall be taken whenever a sample is collected.

b. Microbiological sampling. The purpose of bacterial sampling is to provide data to help track the wastewater plume in the offshore waters, to evaluate compliance with recreational water standards in the kelp beds, and to address issues of beach water quality at the shoreline stations.

Enterococcus shall be measured at the 36 offshore stations at discrete sampling depths on a quarterly basis (Tables 3 and 4, Figure 1). The bottom sample depths listed in Table 4 correspond to the nominal depth contour for these stations; these "bottom" samples should be taken as near to the bottom as possible (e.g., around 1-2 m off the bottom), although the actual depth of sampling may vary slightly due to sea conditions and tidal cycle. The purpose of this offshore sampling is to assist in tracking the wastewater plume and not for compliance purposes, since the recreational bacterial standards do not apply beyond the 3-mile limit.

Total coliforms, fecal coliforms and enterococcus shall be sampled at the eight kelp bed stations at least five times per month, such that each day of the week is represented over a two month period. Samples shall be collected from three discrete depths (Tables 3 and 4, Figure 1); see above paragraph for description of bottom depths. For stations located along the 9-m depth

contour, samples shall be collected at 1 m below the surface, at 3 m below the surface, and near the bottom (~9 m). For stations located along the 18-m depth contour, samples shall be collected at depths of 1 m below the surface, 12 m below the surface, and near the bottom (~18 m).

Total coliforms, fecal coliforms and enterococcus shall be sampled on a weekly basis at eight shoreline stations such that each day of the week is represented over a two month period. (Table 5, Figure 1).

The results of the microbiological sampling at the kelp bed and shoreline stations will be compared to California Ocean Plan Recreational Water standards.

c. Sediment monitoring. The physical and chemical properties of sediments and the biological communities that live in or on these sediments shall be monitored to evaluate potential effects of the outfall. The sediment monitoring program consists of a core program to assess spatial and temporal trends, a special mapping study to further delineate the spatial extent or footprint of any potential effect, and a regional monitoring component.

A core set of 12 to 22 stations shall be sampled twice a year (January and July) to assess spatial and temporal trends (Table 6, Figure 2). These consist of 12 primary core stations located along the 98-m depth contour, and an additional 10 secondary core stations located along the 88-m and 116-m depth contours.

A special study shall be conducted early on in the permit period to determine the optimum sampling design for mapping outfall effects (see Strategic Process Studies). A follow-up mapping effort shall also be conducted within the permit cycle. To accommodate these studies, the requirements for sampling the secondary cores stations shall be relaxed during the years when these mapping efforts occur. The requirements for sampling the secondary core stations shall also be relaxed to allow participation in bight-wide regional monitoring efforts (e.g., Bight'03).

Sediment samples for chemical analyses shall be taken from the top 2 cm of the grab. These samples shall be analyzed for the set of constituents as listed in Table 7. For sediment chemistry, ambient monitoring may be conducted using USEPA approved or methods developed by NOAA's National Status and Trends Program for Marine Environmental Quality or methods developed in conjunction with the Southern California Bight Regional Monitoring Program. For chemical analysis of sediment, samples shall be reported on a dry weight basis.

Benthic community sampling shall consist of two replicate samples collected at each station using a 0.1-m^2 modified Van Veen grab. These sample grabs shall be separate from those collected for chemistry analyses. The samples shall be sieved using a 1.0-mm mesh screen. The benthic organisms retained on the sieve shall be fixed in 15 percent buffered formalin, and

transferred to 70 percent ethanol within two to seven days for storage. All benthic infaunal organisms obtained during benthic monitoring shall be counted and identified to as low a taxon as possible. This enumeration and identification of organisms continues the historical data base developed by the discharger.

Analysis of benthic community structure shall include determination of the number of species, number of individuals per species, and total numerical abundance present. The following parameters shall be summarized for each station:

Number of species per 0.1 m^2
Total number of species per station
Total numerical abundance
Infaunal trophic index (ITI)
Benthic response index (BRI)
Swartz' 75% dominance index
Shannon-Weiner's diversity index (H')
Pielou evenness (J')

d. Fish and invertebrate monitoring. Epibenthic trawls shall be conducted to assess the structure of demersal fish and megabenthic invertebrate communities, while the presence of priority pollutants in fish will be analyzed from species captured using both trawling and rig fishing techniques. Single community trawls for fish and invertebrates shall be conducted semi-annually at six trawl stations (Table 8, Figure 3). These stations represent an area near the outfall (stations SD10 and SD12), an area upcoast of the outfall (stations SD13 and SD14), and an area downcoast of the outfall (stations SD7 and SD8). Trawls shall be conducted using a Marinovich 7.62 m (25 ft) head rope otter trawl, using the guidance specified in the field manual developed for the Southern California Bight regional monitoring surveys. Captured organisms shall be identified at all stations.

All fish and megabenthic invertebrates collected by trawls should be identified to species if possible. Community structure analysis should be conducted at all stations for both fish and invertebrates. For fish, community structure analysis shall consist of determining the total wet weight and total number of individuals per species, the total numerical abundance of all fish, species richness, species diversity (H′), and multivariate pattern analyses (e.g., ordination and classification analyses). The presence of any physical abnormalities or disease symptoms (e.g., fin erosion, external lesions, tumors) or parasites shall also be recorded. For invertebrates, community structure shall be summarized as the total number of individuals per species, the total numerical abundance of all invertebrates, species richness, and species diversity (H′).

Chemical analyses of fish tissues shall be performed annually on target species collected at or near the trawl and rig fishing stations (see Figure 3). The various stations are classified into zones for the purpose of collecting sufficient numbers of fish for tissue analyses (see Table 8). Trawl zone 1 represents the nearfield zone, defined as the area within a 1-km radius of stations SD10 and/or SD12; trawl zone 2 is considered the northern farfield zone, defined as the area within a 1-km radius of stations SD13 and/or SD14; trawl zone 3 represents the LA-5 disposal site zone, and is defined as the area centered within 1-km radius of station SD8; trawl zone 4 is considered the southern farfield zone, and is defined as the area centered within a 1-km radius of station SD7. The two rig fishing stations also represent two distinct zones. Rig fishing zone 1 is the nearfield area centered within a 1-km radius of station RF1; rig fishing zone 2 is considered the farfield area centered within a 1-km radius of station RF2.

Liver tissues shall be analyzed annually from fish collected in each of the above four trawl zones. Each trawl station may be trawled up to a maximum of five times in order to acquire sufficient numbers of fish for composite samples within a zone; trawls subsequent to the initial community trawl discussed above (i.e., trawls 2-5/site) may occur anywhere within a defined zone. Three replicate composites samples shall be prepared from each trawl zone, with each composite consisting of tissues from at least three fish of the same species collected within a zone. These liver tissues shall be analyzed for the presence of lipids, PCB congeners, chlorinated pesticides, and the metals mercury, arsenic and selenium (Table 9). The species targeted for analysis at the trawl sites shall be selected based upon their ecological or commercial importance (see Table 9). These species shall be primarily flatfish, and include the longfin sanddab (*Citharichthys xanthostigma*) and the Pacific sanddab (*Citharichthys sordidus*). If sufficient numbers of these primary target species are not present in a zone, secondary candidate species such as other flatfish or rockfish may be collected as necessary (see Table 9).

Rig fishing shall be performed annually to monitor the uptake of pollutants in fish species which are consumed by humans. Theses fish shall be representative of those caught by recreational and commercial fishery activities in the region. All fish shall be collected by hook and line or by setting baited lines or traps within the two zones described above. The species targeted for analysis at the rig fishing sites shall be primarily rockfish (see Table 9), and include the vermilion rockfish (*Sebastes miniatus*) and the copper rockfish (*Sebastes caurinus*). If sufficient numbers of these primary fish species are not present, other species (e.g., rockfish, scorpionfish) may be collected as necessary. Three replicate composite samples of the target species shall be obtained from each zone, with each composite consisting of a minimum of three individual fish. Muscle tissues shall be removed from the composites and chemically analyzed for the presence of lipids, PCB congeners, chlorinated pesticides, and the metals arsenic, cadmium, chromium, copper, lead, mercury, selenium, tin and zinc.

e. <u>Monitoring of the kelp bed canopy</u>. Kelp bed monitoring is intended to assess the extent to which the discharge of wastes may affect the aerial extent and health of coastal kelp beds. The discharger shall participate with other ocean dischargers in the San Diego Region in an annual regional kelp bed photographic survey. Kelp beds shall be monitored annually by means of vertical aerial infrared photography to determine the maximum aerial extent of the region's coastal kelp beds within the calendar year. Surveys shall be conducted as close as possible to the time when kelp bed canopies cover the greatest area. The entire San Diego Region coastline, from the international boundary to the San Diego Region/Santa Ana Region boundary shall be photographed on the same day. The images produced by the surveys shall be presented in the form of a 1:24,000 scale photo-mosaic of the entire San Diego Region coastline. Onshore reference points, locations of all ocean outfalls and diffusers, and the 30-foot (MLLW) and 60-foot (MLLW) depth contours shall be shown. The aerial extent of the various kelp beds photographed in each survey shall be compared to that noted in surveys of previous years. Any significant losses which persist for more than one year shall be investigated by divers to determine the probable reason for the loss.

2. Strategic Process Studies.

Special studies are an integral part of the permit monitoring program. They differ from other elements of the monitoring program in that they are intended to be short-term and are designed to address specific research or management issues that are not addressed by the routine core monitoring elements.

The scope of the special studies shall be determined by the discharger in coordination with the Executive Officer and the USEPA. The discharger may include input from whatever sources they deem appropriate. Each year, the discharger shall submit proposals for strategic process studies to the Executive Officer and the USEPA by September 30, for the following year's monitoring effort (July through June). The following calendar year, detailed scopes of work for the proposals, including reporting schedules, shall, if requested by the Executive Officer, be presented by the discharger at a spring Regional Board meeting. Upon approval by the Executive Officer and the USEPA, the discharger shall implement the special study. Reporting requirements and deadlines for the results of the special project studies will be determined and set at the time of project approval. Strategic process studies conducted during the period of this permit shall be at a level of effort equal to that of Year 1, unless the Executive Officer, USEPA, and discharger agree otherwise.

The special studies for Year 1 of the permit include the following:

a. Evaluation of the current monitoring program. The discharger shall fund an independent scientific review of the existing ocean monitoring program. At a minimum this study will

address the extent to which the program addresses the principles and elements outlined in the Model Monitoring Program for Large Ocean Discharges in Southern California. Additionally, the scientists conducting the study shall consider the concerns of the discharger, regulators, and non-government organizations (NGOs) with regard to program adequacy and its ability to assess impacts to the environment and or public health. The study will provide input for future monitoring program modifications and will identify potential key research needs that may form the framework for planning special project studies in future years.

b. Sediment mapping study. During Year 1 the discharger shall develop the scope for a study to identify the optimal sampling design to determine the spatial extent of any outfall effect on sediments or benthic communities. The study is scheduled for the summer of 2004.

c. Remote Sensing. The discharger shall participate and coordinate with state and local agencies and other dischargers in the San Diego Region in the development and implementation of a remote sensing monitoring program for the trans-border ocean region. This remote sensing monitoring program is intended to identify and track (in near real time) the fate and transport of wastewater discharged through the Point Loma and South Bay ocean outfalls, wet weather runoff from the Tijuana River, and other sources of coastal sewage and stormwater plumes in the area. This program will focus on obtaining satellite and aircraft imagery in an area extending up to 100 Km North and 100 Km south of the US-Mexico Border and up to 15 Km offshore. The discharger shall provide both technical and financial assistance with this program. It is anticipated that this program will continue in future years.

3. Regional Monitoring.

The discharger shall participate in regional monitoring activities coordinated by the Southern California Coastal Water Project (SCCWRP). The procedures for Executive Officer and USEPA approval shall be the same as detailed above for the strategic process studies. The intent of regional monitoring activities is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the region. During these coordinated sampling efforts, the discharger's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The discharger has participated in regional monitoring efforts in 1994, 1998 and will be participating in the regional monitoring effort scheduled to begin in the summer of

2003 (Bight'03). The level of effort will provided to the Executive Officer and USEPA for approval.

During the 2003 regional survey, the discharger shall provide in-kind services in participating in all three components of the proposed regional monitoring activities as defined by the Bight'03 Steering Committee:

- Coastal Ecology (e.g., assessment of benthic sediment chemistry and macrofaunal communities, trawl-caught fish and invertebrate communities, tissue burden analyses of target pelagic and benthic species, sediment toxicity)
- Water Quality (e.g., offshore plume tracking associated with stormwater and riverine runoff from storm events, involving integration of remote sensing and collection of water samples at sea; sampling events coordinated with Microbiology component)
- Microbiology (e.g., shoreline and surf zone microbiology tracking associated with storm events; sampling events coordinated with Water Quality component)

The discharger will be responsible for submitting the data collected during their portion of the regional monitoring program according to the prescribed schedule set by the Bight'03 Steering Committee. Detailed analysis of these data will not be required separately by the discharger since they will participate in the analysis and write-up of the complete results from the regional monitoring efforts. The final results, conclusions and recommendations of the project will be published as part of a comprehensive monitoring report for the Bight'03 regional monitoring survey.

It is anticipated that subsequent regional monitoring efforts will occur at 5-year intervals.

4. Reporting.

Reports of marine monitoring surveys conducted to meet receiving water monitoring requirements of this MRP shall include, as a minimum, the following information:

- A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling, tide height, etc.).

- A description of sampling stations, including differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.).

- A description of the sample collection and preservation procedures used in the survey.

- A description of the specific method used for laboratory analysis.

- An in-depth discussion of the results of the survey. All tabulations and computations shall be explained.

Annual reports will be due July 1st and will include detailed statistical analyses of all data. Methods may include, but are not limited to, various multivariate analyses such as cluster analysis, ordination, and regression. The discharger should also conduct additional analyses, as appropriate, to elucidate temporal and spatial trends in the data.

TABLE 1. INFLUENT AND EFFLUENT SAMPLING AND ANALYSIS REQUIREMENTS

CONSTITUENT	Unit	Sample type	Sampling frequency		
			Influent stream	**Effluent stream**	**Emergency connection**
flowrate	MGD	recorder/totalizer	Continuous	Continuous	Continuous
BOD_5@20^0C	mg/l	24 hr. composite	Daily	Daily	Weekly
volatile suspended solids	mg/l	24 hr. composite	Daily	Daily	Weekly
total dissolved solids	mg/l	24 hr. composite	Daily	Daily	Weekly
temperature	^0C	grab	Daily	Daily	Weekly
floating particulates	mg/l	24 hr. composite	Daily	Daily	Weekly
TABLE A parameters					
grease & oil	mg/l	grab	Daily	Daily	Weekly
total suspended solids	mg/l	24 hr. composite	Daily	Daily	Weekly
settleable solids	ml/l	grab	Daily	Daily	Weekly
turbidity	NTU	grab	Daily	Daily	Weekly
pH	units	grab	Daily	Daily	Weekly
Table B parameters for protection of marine aquatic life					
arsenic	µg/l	24 hr. composite	Weekly	Weekly	Weekly
cadmium	µg/l	24 hr. composite	Weekly	Weekly	Weekly
chromium (VI)[1]	µg/l	24 hr. composite	Weekly	Weekly	Weekly
copper	µg/l	24 hr. composite	Weekly	Weekly	Weekly
lead	µg/l	24 hr. composite	Weekly	Weekly	Weekly
mercury	µg/l	24 hr. composite	Weekly	Weekly	Weekly

CONSTITUENT	Unit	Sample type	Sampling frequency		
			Influent stream	Effluent stream	Emergency connection
nickel	µg/l	24 hr. composite	Weekly	Weekly	Weekly
selenium	µg/l	24 hr. composite	Weekly	Weekly	Weekly
silver	µg/l	24 hr. composite	Weekly	Weekly	Weekly
zinc	µg/l	24 hr. composite	Weekly	Weekly	Weekly
cyanide	µg/l	24 hr. composite	Weekly	Weekly	Weekly
ammonia (as N)	mg/l	24 hr. composite	Weekly	Weekly	Weekly
acute toxicity	TUa	24 hr. composite	-	Semi-annually	-
chronic toxicity	TUc	24 hr. composite	-	Monthly	-
phenolic compounds (nonchlorinated)	µg/l	24 hr. composite	Weekly	Weekly	Weekly
phenolic compounds (chlorinated)	µg/l	24 hr. composite	Weekly	Weekly	Weekly
endosulfan	µg/l	24 hr. composite	Weekly	Weekly	Weekly
endrin	µg/l	24 hr. composite	Weekly	Weekly	Weekly
HCH[2]	µg/l	24 hr. composite	Weekly	Weekly	Weekly
radioactivity	pci/l	24 hr. composite	Monthly	Monthly	Monthly
Table B parameters for protection of human health - non carcinogens					
acrolein	µg/l	grab	Monthly	Monthly	Monthly
antimony	µg/l	24 hr. composite	Monthly	Monthly	Monthly
bis(2-chloroethoxy) methane	µg/l	24 hr. composite	Monthly	Monthly	Monthly
bis(2-chloroisopropyl) ether	µg/l	24 hr. composite	Monthly	Monthly	Monthly
chlorobenzene	µg/l	grab	Monthly	Monthly	Monthly
chromium (III)[1]	µg/l	24 hr. composite	Monthly	Monthly	Monthly
di-n-butyl phthalate	µg/l	24 hr. composite	Monthly	Monthly	Monthly
dichlorobenzenes[3]	µg/l	24 hr composite	Monthly	Monthly	Monthly
diethyl phthalate	µg/l	24 hr. composite	Monthly	Monthly	Monthly
dimethyl phthalate	µg/l	24 hr. composite	Monthly	Monthly	Monthly
4,6-dinitro-2-methylphenol	µg/l	24 hr. composite	Monthly	Monthly	Monthly
2,4-dinitrophenol	µg/l	24 hr. composite	Monthly	Monthly	Monthly
ethylbenzene	µg/l	grab	Monthly	Monthly	Monthly
fluoranthene	µg/l	24 hr. composite	Monthly	Monthly	Monthly
hexachlorocyclopentadiene	µg/l	24 hr. composite	Monthly	Monthly	Monthly
nitrobenzene	µg/l	24 hr. composite	Monthly	Monthly	Monthly

CONSTITUENT	Unit	Sample type	Sampling frequency		
			Influent stream	Effluent stream	Emergency connection
thallium	µg/l	24 hr. composite	Monthly	Monthly	Monthly
toluene	µg/l	grab	Monthly	Monthly	Monthly
tributyltin	µg/l	24 hr. composite	Monthly	Monthly	Monthly
1,1,1-trichloroethane	µg/l	grab	Monthly	Monthly	Monthly
Table B parameters for protection of human health – carcinogens					
acrylonitrile	µg/l	grab	Monthly	Monthly	Monthly
aldrin	µg/l	24 hr. composite	Weekly	Weekly	Weekly
benzene	µg/l	grab	Monthly	Monthly	Monthly
benzidine	µg/l	24 hr composite	Monthly	Monthly	Monthly
beryllium	µg/l	24 hr. composite	Monthly	Monthly	Monthly
bis(2-chloroethyl) ether	µg/l	24 hr. composite	Monthly	Monthly	Monthly
bis(2-ethylhexyl) phthalate	µg/l	24 hr. composite	Monthly	Monthly	Monthly
carbon tetrachloride	µg/l	grab	Monthly	Monthly	Monthly
chlordane[5]	µg/l	24 hr. composite	Weekly	Weekly	Weekly
chlorodibromomethane	µg/l	24 hr. composite	Monthly	Monthly	Monthly
chloroform	µg/l	grab	Monthly	Monthly	Monthly
DDT[6]	µg/l	24 hr. composite	Weekly	Weekly	Weekly
1,4-dichlorobenzene	µg/l	24 hr. composite	Monthly	Monthly	Monthly
3,3'-dichlorobenzidine	µg/l	24 hr. composite	Monthly	Monthly	Monthly
1,2-dichloroethane	µg/l	grab	Monthly	Monthly	Monthly
1,1-dichloroethylene	µg/l	grab	Monthly	Monthly	Monthly
dichlorobromomethane	µg/l	24 hr. composite	Monthly	Monthly	Monthly
dichloromethane	µg/l	grab	Monthly	Monthly	Monthly
1,3-dichloropropene	µg/l	24 hr. composite	Monthly	Monthly	Monthly
dieldrin	µg/l	24 hr. composite	Weekly	Weekly	Weekly
2,4-dinitrotoluene	µg/l	24 hr. composite	Monthly	Monthly	Monthly
1,2-diphenylhydrazine	µg/l	24 hr. composite	Monthly	Monthly	Monthly
halomethanes[7]	µg/l	24 hr. composite	Monthly	Monthly	Monthly
heptachlor	µg/l	24 hr. composite	Monthly	Monthly	Monthly
hepthachlor epoxide	µg/l	24 hr. composite	Monthly	Monthly	Monthly
hexachlorobenzene	µg/l	24 hr. composite	Monthly	Monthly	Monthly
hexachlorobutadiene	µg/l	24 hr. composite	Monthly	Monthly	Monthly
hexachloroethane	µg/l	24 hr. composite	Monthly	Monthly	Monthly

CONSTITUENT	Unit	Sample type	Sampling frequency		
			Influent stream	Effluent stream	Emergency connection
isophorone	µg/l	24 hr. composite	Monthly	Monthly	Monthly
N-nitrosodimethylamine	µg/l	24 hr. composite	Monthly	Monthly	Monthly
N-nitroso-di-N-propylamine	µg/l	24 hr. composite	Monthly	Monthly	Monthly
N-nitrosdiphenylamine	µg/l	24 hr. composite	Monthly	Monthly	Monthly
PAHs[8]	µg/l	24 hr. composite	Monthly	Monthly	Monthly
PCBs[9]	µg/l	24 hr. composite	Weekly	Weekly	Weekly
1,1,2,2-tetrachloroethane	µg/l	grab	Monthly	Monthly	Monthly
TCDD equivalents[10]	ρg/l	24 hr. composite	Monthly	Monthly	Monthly
tetrachloroethylene	µg/l	grab	Monthly	Monthly	Monthly
toxaphene	µg/l	24 hr. composite	Weekly	Weekly	Weekly
trichloroethylene	µg/l	grab	Monthly	Monthly	Monthly
1,1,2-trichloroethane	µg/l	grab	Monthly	Monthly	Monthly
2,4,6-trichlorophenol	µg/l	24 hr. composite	Monthly	Monthly	Monthly
vinyl chloride	µg/l	grab	Monthly	Monthly	Monthly
remaining "priority pollutants"	µg/l	24 hr. composite	Monthly	Monthly	Monthly

Table 1. Footnotes

1. The discharger may, at its option, meet the effluent limitation and effluent mass emission benchmark for chromium (VI) or chromium (III) as a total chromium limitation and benchmark.

2. Endosulfan shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

3. HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

4. Dichlorobenzenes shall mean the sum of 1,2- and 1,3-dichlorobenzene.

5. Chlordane shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

6. DDT shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

7. Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide), chloromethane (methyl chloride).

8. PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

9. PCBs (polychlorinated biphenyls) shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

10. TCDD equivalents shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below. USEPA method 8280 may be used to analyze TCDD equivalence.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

11. For sediment and fish tissue PCBs shall mean the sum of the following congeners: 18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, 206. These represent concensus based numbers developed by agencies participating in offshore regional monitoring programs in Southern California. These 41 congeners are thought to represent the most-important PCB congeners in terms of mass and toxicity.

TABLE 2. SAMPLING OF RETURN STREAMS

Parameter	Units	Sample type	Sampling frequency
flowrate	MGD	recorder/totalizer	Continuous
total suspended solids	mg/l	24 hr. composite	Daily
$BOD_5@20^0C$	mg/l	24 hr. composite	Daily

TABLE 3. RECEIVING WATER MONITORING REQUIREMENTS

Parameter	Units	Sample Type	Sampling Frequency	
			Offshore stations	Kelp stations
visual observations	---	visual	quarterly	5x/month
temperature	^oC	profile	quarterly	5x/month
Salinity	ppt	profile	quarterly	5x/month
dissolved oxygen	mg/l	profile	quarterly	5x/month
light transmittance	%	profile	quarterly	5x/month
Chlorophyll *a*	m	profile	quarterly	5x/month
pH	units	profile	quarterly	5x/month
total and fecal coliforms	CFU/100 ml	grab	—	5x/month
enterococcus	CFU/100 ml	grab	quarterly	5x/month

TABLE 4. OFFSHORE AND KELP BED WATER QUALITY STATIONS (SEE FIGURE 1)

Offshore Stations	Depth (m)	N. Latitude	W. Longitude	Discrete depths for bacteria samples
F01	18	32° 38.10'	117° 14.41'	1 m, 12 m, 18 m
F02	18	32° 45.41'	117° 16.19'	1 m, 12 m, 18 m
F03	18	32° 46.96'	117° 16.06'	1 m, 12 m, 18 m
F04	60	32° 35.64'	117° 16.60'	1 m, 25 m, 60 m
F05	60	32° 36.72'	117° 16.67'	1 m, 25 m, 60 m
F06	60	32° 37.82'	117° 16.73'	1 m, 25 m, 60 m
F07	60	32° 39.07'	117° 16.80'	1 m, 25 m, 60 m
F08	60	32° 40.26'	117° 17.27'	1 m, 25 m, 60 m
F09	60	32° 41.12'	117° 17.51'	1 m, 25 m, 60 m
F10	60	32° 42.33'	117° 17.44'	1 m, 25 m, 60 m
F11	60	32° 43.53'	117° 17.68'	1 m, 25 m, 60 m
F12	60	32° 44.88'	117° 17.64'	1 m, 25 m, 60 m
F13	60	32° 45.95'	117° 18.02'	1 m, 25 m, 60 m
F14	60	32° 46.89'	117° 18.69'	1 m, 25 m, 60 m
F15	80	32° 35.65'	117° 18.04'	1 m, 25 m, 60 m, 80 m
F16	80	32° 36.72'	117° 18.14'	1 m, 25 m, 60 m 80 m
F17	80	32° 37.79'	117° 18.31'	1 m, 25 m, 60 m, 80 m
F18	80	32° 38.93'	117° 18.52'	1 m, 25 m, 60 m, 80 m
F19	80	32° 39.98'	117° 18.90'	1 m, 25 m, 60 m, 80 m
F20	80	32° 41.12'	117° 18.99'	1 m, 25 m, 60 m, 80 m
F21	80	32° 42.23'	117° 19.12'	1 m, 25 m, 60 m, 80 m
F22	80	32° 43.36'	117° 19.25'	1 m, 25 m, 60 m, 80 m
F23	80	32° 44.64'	117° 19.40'	1 m, 25 m, 60 m, 80 m
F24	80	32° 45.74'	117° 19.63'	1 m, 25 m, 60 m, 80 m
F25	80	32° 46.80'	117° 20.16'	1 m, 25 m, 60 m, 80 m
F26	98	32° 35.61'	117° 19.29'	1 m, 25 m, 60 m, 80 m, 98 m
F27	98	32° 36.72'	117° 19.02'	1 m, 25 m, 60 m, 80 m, 98 m
F28	98	32° 37.76'	117° 19.42'	1 m, 25 m, 60 m, 80 m, 98 m
F29	98	32° 38.87'	117° 19.50'	1 m, 25 m, 60 m, 80 m, 98 m
F30	98	32° 39.94'	117° 19.49'	1 m, 25 m, 60 m, 80 m, 98 m
F31	98	32° 41.08'	117° 19.70'	1 m, 25 m, 60 m, 80 m, 98 m
F32	98	32° 42.16'	117° 19.80'	1 m, 25 m, 60 m, 80 m, 98 m
F33	98	32° 43.30'	117° 19.93'	1 m, 25 m, 60 m, 80 m, 98 m
F34	98	32° 44.44'	117° 20.27'	1 m, 25 m, 60 m, 80 m, 98 m
F35	98	32° 45.48'	117° 20.97'	1 m, 25 m, 60 m, 80 m, 98 m
F36	98	32° 46.63'	117° 21.40'	1 m, 25 m, 60 m, 80 m, 98 m
Kelp Stations	**Depth (m)**	**N. Latitude**	**W. Longitude**	**Discrete depths for bacteria samples**
A1	18	32° 39.56'	117° 15.72'	1 m, 12 m, 18 m
A6	18	32° 41.56'	117° 16.18'	1 m, 12 m, 18 m
A7	18	32° 40.53'	117° 16.01'	1 m, 12 m, 18 m
C4	9	32° 39.95'	117° 14.98'	1 m, 3 m, 9 m
C5	9	32° 40.75'	117° 15.40'	1 m, 3 m, 9 m
C6	9	32° 41.62'	117° 15.68'	1 m, 3 m, 9 m
C7	18	32° 42.98'	117° 16.33'	1 m, 12 m, 18 m

Offshore Stations	Depth (m)	N. Latitude	W. Longitude	Discrete depths for bacteria samples
C8	18	32° 43.96'	117° 16.40'	1 m, 12 m, 18 m

TABLE 5. LOCATION OF SHORELINE BACTERIA STATIONS (SEE FIGURE 1)

Station	N. Latitude	W. Longitude	Description
D4	32° 39.94'	117° 14.62'	Located at the southernmost tip of Point Loma just north of the lighthouse
D5	32° 40.85'	117° 14.94'	Directly in front of the Point Loma Wastewater Treatment plant where the outfall pipe enters the ocean
D7	32° 43.16'	117° 15.44'	Sunset Cliffs at the foot of the stairs seaward of Ladera Street
D8	32° 44.22'	117° 15.32'	Ocean Beach at the foot of the stairs seaward of Bermuda Street
D9	32° 44.80'	117° 15.24'	Just south of the Ocean Beach pier at the foot of the stairs seaward of Narragansett Street
D10	32° 44.95'	117° 15.18'	Ocean Beach just north of west end of Newport Avenue, directly west of main lifeguard station
D11	32° 45.24'	117° 15.16'	North Ocean Beach (Dog Beach), directly west of south end of Dog Beach parking area at Voltaire St terminus, south side of stub jetty
D12	32° 46.28'	117° 15.21'	Mission Beach, directly west of main lifeguard station in Belmont Park located at the west end of Mission Bay Drive

TABLE 6. LOCATION OF OFFSHORE SEDIMENT STATIONS (SEE FIGURE 2)

Primary Core Stations	Depth (m)	N. Latitude	W. Longitude	Descriptor
B9	98	32° 45.33'	117° 21.70'	10.5 Km north of diffuser "Y"
B12	98	32° 46.36'	117° 22.30'	12.7 Km north of diffuser "Y"
E2	98	32° 37.45'	117° 19.09'	4.6 Km south of diffuser "Y"
E5	98	32° 38.38'	117° 19.28'	3.1 Km south of diffuser "Y"
E8	98	32° 38.91'	117° 19.34'	2.1 Km south of diffuser "Y"
E11	98	32° 39.40'	117° 19.42'	1.2 Km south of diffuser "Y"
E14	98	32° 39.94'	117° 19.49'	0.3 Km west of diffuser "Y"
E17	98	32° 40.48'	117° 19.54'	0.9 Km north of diffuser "Y"
E20	98	32° 40.96'	117° 19.67'	1.8 Km north of diffuser "Y"
E23	98	32° 41.47'	117° 19.77'	2.7 Km north of diffuser "Y"
E25	98	32° 42.38'	117° 20.07'	4.5 Km north of diffuser "Y"
E26	98	32° 43.82'	117° 20.57'	7.3 Km north of diffuser "Y"
Secondary Core Stations	**Depth (m)**	**N. Latitude**	**W. Longitude**	**Descriptor**
B8	88	32° 45.50'	117° 20.77'	
B11	88	32° 46.57'	117° 21.35'	
E1	88	32° 37.53'	117° 18.35'	
E7	88	32° 39.00'	117° 18.65'	
E19	88	32° 41.04'	117° 19.18'	
B10	116	32° 45.22'	117° 22.16'	
E3	116	32° 37.29'	117° 20.09'	
E9	116	32° 38.75'	117° 20.06'	
E15	116	32° 39.88'	117° 19.91'	
E21	116	32° 40.89'	117° 20.00'	

TABLE 7. OFFSHORE SEDIMENT MONITORING REQUIREMENTS

Parameter	Units	Sample type	Frequency
Sediment grain size	µm	grab	semiannual
Total Organic Carbon	%	grab	semiannual
Total Nitrogen	%	grab	semiannual
Acid soluble sulfides	mg/kg	grab	semiannual
Metals			
Aluminum	mg/kg	grab	semiannual
Antimony	mg/kg	grab	semiannual
Arsenic	mg/kg	grab	semiannual
Cadmium	mg/kg	grab	semiannual
Chromium	mg/kg	grab	semiannual
Copper	mg/kg	grab	semiannual
Iron	mg/kg	grab	semiannual
Lead	mg/kg	grab	semiannual
Manganese	mg/kg	grab	semiannual
Mercury	mg/kg	grab	semiannual
Nickel	mg/kg	grab	semiannual
Selenium	mg/kg	grab	semiannual
Silver	mg/kg	grab	semiannual
Tin	mg/kg	grab	semiannual
Zinc	mg/kg	grab	semiannual
PCBs and Chlorinated Pesticides			
PCBs[11]	ng/kg	grab	semiannual
2,4'-DDD	ng/kg	grab	semiannual
4,4'-DDD	ng/kg	grab	semiannual
2,4'-DDE	ng/kg	grab	semiannual
4,4'-DDE	ng/kg	grab	semiannual
2,4'-DDT	ng/kg	grab	semiannual
4,4'-DDT	ng/kg	grab	semiannual
Aldrin	ng/kg	grab	semiannual
alpha-Chlordane	ng/kg	grab	semiannual
Dieldrin	ng/kg	grab	semiannual
Endosulfan	ng/kg	grab	semiannual
Endrin	ng/kg	grab	semiannual
gamma-BHC	ng/kg	grab	semiannual
Heptachlor	ng/kg	grab	semiannual
Heptachlor epoxide	ng/kg	grab	semiannual

Parameter	Units	Sample type	Frequency
Hexachlorobenzene	ng/kg	grab	semiannual
Mirex	ng/kg	grab	semiannual
Trans-nonachlor	ng/kg	grab	semiannual

Polycyclic Aromatic Hydrocarbons			
Acenapthene	µg/kg	grab	semiannual
Acenaphthylene	µg/kg	grab	semiannual
Anthracene	µg/kg	grab	semiannual
Benz(a)anthracene	µg/kg	grab	semiannual
Benzo(b)fluoranthene	µg/kg	grab	semiannual
Benzo(k)fluoranthene	µg/kg	grab	semiannual
Benzo(ghi)pyrelene	µg/kg	grab	semiannual
Benzo(a)pyrene	µg/kg	grab	semiannual
Benzo(e)pyrene	µg/kg	grab	semiannual
Biphenyl	µg/kg	grab	semiannual
Chrysene	µg/kg	grab	semiannual
Dibenz(ah)anthracene	µg/kg	grab	semiannual
Fluoranthene	µg/kg	grab	semiannual
Fluorene	µg/kg	grab	semiannual
Indeno(123cd)pyrene	µg/kg	grab	semiannual
Naphthalene	µg/kg	grab	semiannual
1-Methylnaphthalene	µg/kg	grab	semiannual
2-Methylnaphthalene	µg/kg	grab	semiannual
2,6-Dimethylnaphthalene	µg/kg	grab	semiannual
2,3,5-Trimethylnaphthalene	µg/kg	grab	semiannual
Perylene	µg/kg	grab	semiannual
Phenanthrene	µg/kg	grab	semiannual
1-Methylphenanthrene	µg/kg	grab	semiannual
Pyrene	µg/kg	grab	semiannual

TABLE 8. LOCATION OF TRAWL AND RIG FISH STATIONS (SEE FIGURE 3)

Station	Depth (m)	N. Latitude	W. Longitude
SD7 (Zone 4)	100	32° 35.06'	117° 18.39'
SD8 (Zone 3)	100	32° 37.54'	117° 19.37'
SD10 (Zone 1)	100	32° 39.16'	117° 19.50'
SD12 (Zone 1)	100	32° 40.65'	117° 19.81'
SD13 (Zone 2)	100	32° 42.83'	117° 20.25'
SD14 (Zone 2)	100	32° 44.30'	117° 20.96'
Rig fish stations shall be located in an area centered around the following sites			
RF1 (Zone 1)	107	32° 40.32'	117° 19.78'
RF2 (Zone 2)	96	32° 45.67'	117° 22.02'

TABLE 9. FISH TISSUE ANALSYES

Station type	Tissue type	Analyte	Candidate species
trawl stations	liver	Lipids PCB congeners Chlorinated pesticides Trace metals (arsenic, mercury, selenium)	Primary target species Longfin sanddab Pacific sanddab Secondary target species Other flatfish (e.g., bigmouth sole, hornyhead turbot, Dover sole, English sole) Rockfish (e.g., *Sebastes* spp)
rig stations	muscle	Lipids PCB congeners Chlorinated pesticides Trace metals (arsenic, cadmium, chromium, copper, lead, mercury, selenium, tin, zinc)	Primary target species Vermilion rockfish Copper rockfish Secondary target species Other rockfish (e.g., *Sebastes* spp)

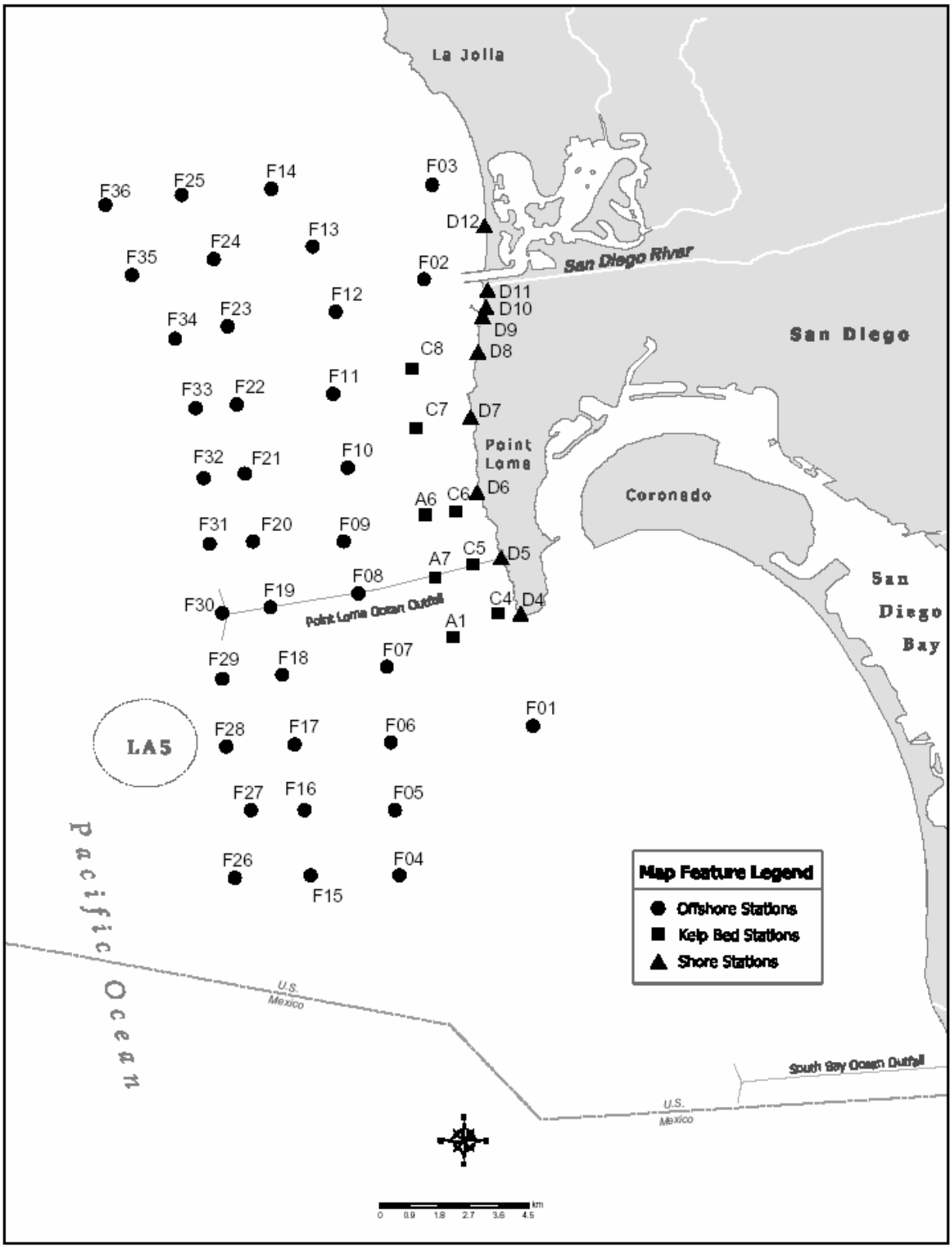

FIGURE 1.
Locations of shore, kelp bed, and offshore water quality monitoring stations surrounding the City of San Diego Point Loma Ocean Outfall

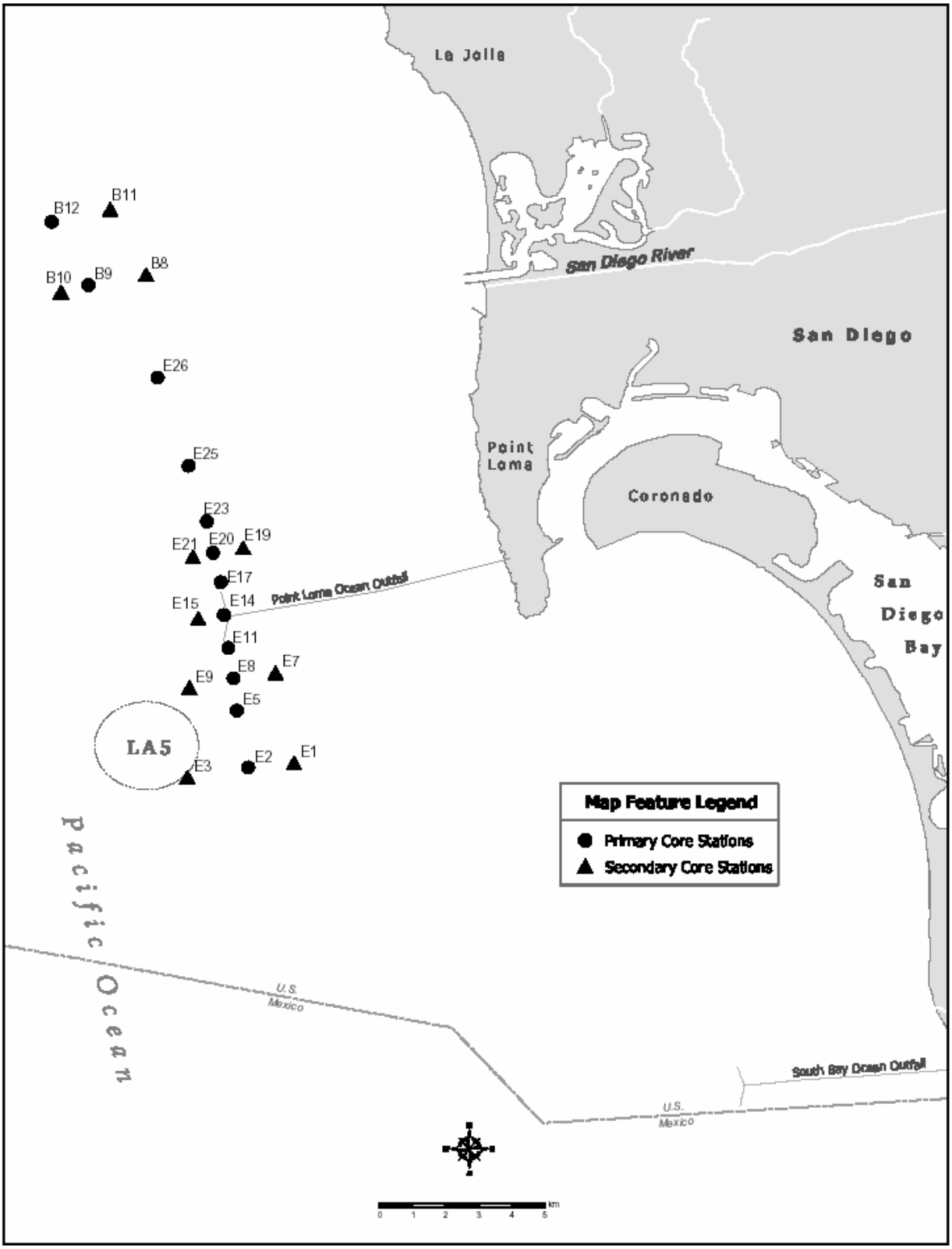

FIGURE 2.
Locations of benthic sediment and infauna monitoring stations surrounding the City of San Diego Point Loma Ocean Outfall

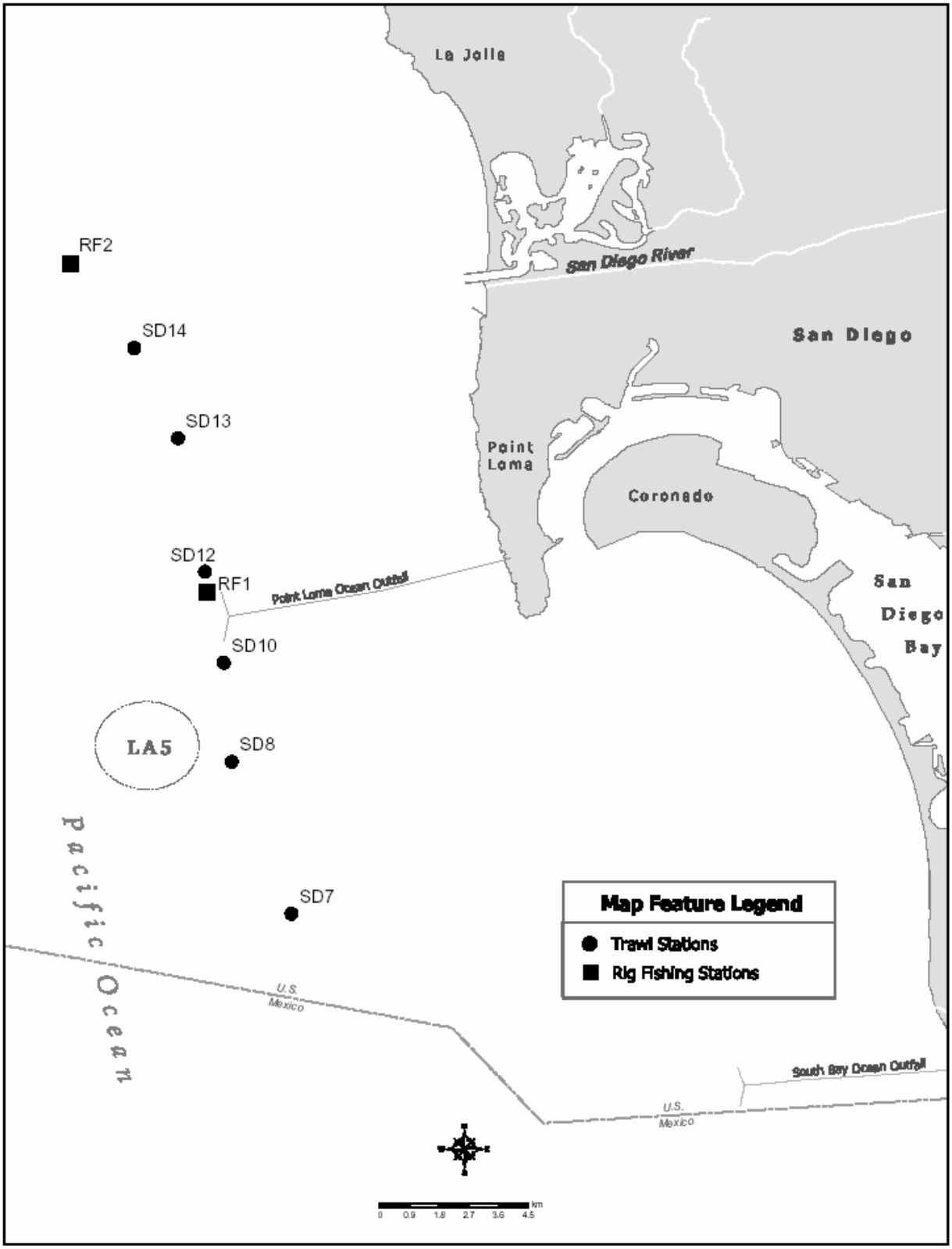

FIGURE 3.
Locations of trawl and rig fishing stations surrounding the City of San Diego Point Loma Ocean Outfall

This certifies that the foregoing is a full, true, and correct copy of Addendum No. 1 to Order No. R9-2002-0025, NPDES Permit No. CA0107409 adopted by the California Regional Water Quality Control Board, San Diego Region, on June 11, 2003 and issued by the United States Environmental Protection Agency, Region IX, on _____ , 2003.

TENTATIVE

JOHN H. ROBERTUS
Executive Officer
California Regional Water Quality Control Board
San Diego Region

TENTATIVE

ALEXIS STRAUSS
Director
Water Division
U. S. Environmental Protection Agency
Region IX

For the Regional Administrator